UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,622	07/18/2000	I-Teh Sha	0325.00377	9310

21363 7590 06/30/2004

CHRISTOPHER P. MAIORANA, P.C.
24840 HARPER
ST. CLAIR SHORES, MI 48080

EXAMINER	
CORRIELUS, JEAN B	

ART UNIT	PAPER NUMBER
2631	11

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary (SUPPLEMENTAL)	Application No. 09/618,622	Applicant(s) SHA ET AL.	
	Examiner Jean B Corrielus	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 5-14* is/are rejected.

7)☒ Claim(s) *15-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☒ Interview Summary (PTO-413) Paper No(s). 3 .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Examiner's comment.

1. This communication is to supplement the office action mailed on, 6/14/04. The Supplemental is necessary for the reasons underlined in the attached interview summary record. In addition, the finality of the last office action is withdrawn and the statutory time to reply to this office action will expire 3 months from the mailing date of the same (this office action).

Claim Objections

2. Claims 15-20 and 22 are objected to because of the following informalities: claim 15 recites a series of steps A-1 and A2, however, there is no connection between such steps and subsequently recited steps. Claims 16-20 and 22 are likewise objected to because of their dependency to objected claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 5-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's prior art fig. 1 in view of Kindinger et al US Patent No. 4,609,884 and further in view of Le Febre Us patent No. 3,689,754.

As per claims 1 and 14, Applicant's admitted prior art fig. 1 an apparatus having a circuit for generating a spread spectrum clock signal See fig. 1 and a vco 18. However, applicant's admitted prior art does not teach that the VCO has an automatically controlled gain and that it also fails to teach that the gain of the VCO varies in response to a frequency of said spread spectrum clock signal and a function curve for said non-linear gain is generated by a predetermined criteria. However, as evidence by Kindinger et al at col. 1, lines 22-59, it is well known in the art for a VCO to include automatically controlled gain. Given that fact, it would have been obvious to one skill in the art at the time of the invention to include such a teaching in applicant's admitted prior art fig. 1 so as set the minimum steering line voltage greater than the peak RF voltage level to prevent recertification as taught by Kindinger et al see col. 1, lines 45-48. Note that, by substituting the regular VCO by a VCO having gain control capability, Kindinger et al completes applicant's admitted prior art. As shown in the figure (fig. 1 of applicant's admitted prior art) the clock signal is fed back and would be used to control the gain of the AGC of the VCO 26. And the reason to use the clock frequency of the ss clock signal to control the gain of the VCO would have been the same as the one provided above. Furthermore, Le Febre teaches the further limitations of generating a function curve for said non-linear gain by a predetermined criteria see fig. 2 and col. 6, lines 60-63. Given that fact, It would

have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in apllicant's admitted prior art and Kindinger et al in order to prevent the gain from changing rapidly as taught by Le Febre see col. 5, lines 6-7.

As per claims 5 and 6, it would have been obvious to one skill in the art to a parabolic curve or a second degree or higher polynomial as the function curve. The reasons to do would have been the same as provided in reference to claim 1.

As per claim 7, generating a function curve using a computer is old and well established in the art. Given that, it would have been obvious to one skill in the art at the time of the invention to generate a function curve using such a device in order to enhance the reliability of the system.

As per claim 8 it would have been obvious to one skill in the art to generate the clock signal in response to a reference signal having a frequency from 50 -1570 MHZ in order to satisfy specific system design requirements.

As per claim 9, Applicant's prior art fig. 1 teaches the use of a single set of ROM codes 24.

As per claim 10, Applicant's prior art fig. 1 teaches that said ROM codes determine a frequency modulation profile for said ss clock.

As per claim 11 said circuit includes a divider 20.

As per claim 12, Applicant's prior art fig. 1 teaches that said ROM control said divider 20.

5. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's prior art fig. 1 in view of Kindinger et al US Patent No. 4,609,884.

As per claim 1, Applicant's admitted prior art fig. 1 an apparatus having a VCO 18 for generating a spread spectrum clock signal, See fig. 1, in response to a control signal VIN; a control circuit (12, 14, 16, 20, 22 and 24) configured to generate said control signal VIN in a response to a reference signal REF said spread spectrum clock signal and a set of Rom codes see fig. 1. However, applicant's admitted prior art does not teach that the VCO has a non linear gain that is automatically controlled and varied in response a frequency of said spread spectrum clock signal. However, as evidence by Kindinger et al at col. 1, lines 22-59, it is well known in the art for a VCO to include automatically controlled gain. Given that fact, it would have been obvious to one skill in the art at the time of the invention to include such a teaching in applicant's admitted prior art fig. 1 so as set the minimum steering line voltage greater than the peak RF voltage level to prevent recertification as taught by Kindinger et al see col. 1, lines 45-48. Note that, by substituting the regular VCO by a VCO having gain control capability, Kindinger et al completes applicant's admitted prior art. As shown in the figure (fig. 1 of applicant's admitted prior art) the clock signal is fed back and would be used to control the gain of the AGC of the VCO 26. And the reason to use the clock frequency of the ss clock signal to control the gain of the VCO would have been the same as the one provided above.

Allowable Subject Matter

6. Claims 15-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 5/17/04 have been fully considered but they are not persuasive. It is alleged that Kindinger does not teach or suggest a VCO having an automatically controlled nonlinear gain where the nonlinear gain of the VCO varies in response to a frequency of the output clock signal. Examiner agrees only that Kindinger does not explicitly teach that the gain of the VCO is non-linear. However, it is noted that La Febre was introduced to teach such a limitation. More specifically, fig 2(d and e) shows a graph configuration of the waveform of the gain of the VCO indicating that the gain is non-linear. It is further alleged that Kindinger does not teach that the gain of the VCO varies in response to a frequency of the output of the VCO. However, it is noted at col. 1, lines 43-46 that Kindinger teaches such limitation of the claim. Applicant further asserted that Kindinger does not teach a function curve for the gain being determined by a predetermined criteria. Note that La Febre was introduced to teach such limitation of the claim see col. 6, lines 60-63 and fig. 2. . It is further asserted that Le febre does not teach a nonlinear gain that varies in response to a frequency of a spread spectrum signal. However, fig. 2 of Le febre shows that the gain is nonlinear.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction

based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the reasons to combine is found in Kindinger col. 1, lines 45-48 and La Febre col. 6, lines 60-63.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. **Any response to this final action should be mailed to:**

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 305-872-9314, (for formal communications; please mark "EXPEDITED PROCEDURE") and (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is (703) 305-4023. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour, can be reached on (703) 306-3034.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Jean B. Corrielus

Primary Examiner

TC-2600 6/25/04